

Attorney Docket No.: 48544.00012 (DC-0293)  
Inventor: Paula Sundstrom  
Serial No.: 10/672,074  
Filing Date: September 29, 2003  
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This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): A method for altering the virulence properties of *C. albicans* comprising the step of: contacting *C. albicans* with a *C. albicans* PDE2 gene or PDE2 binding partner thereby altering the expression of the *C. albicans* PDE2 gene encoding a protein comprising the amino acid sequence of SEQ ID NO:3, wherein said altered expression affects the virulence properties of *C. albicans*.

Claim 2 (original): The method of claim 1, wherein said altered expression of PDE2 gene comprises inhibiting expression of said PDE2 gene.

Claim 3 (original): The method of claim 2, wherein said inhibiting expression of PDE2 gene results in one or more of the group consisting of enhanced activation of the cAMP-PKA signaling pathway, hyperactive germ tube formation, avirulence, attenuated avirulence, hyperproduction of HWP1, sensitivity to nutrient starvation, defective entry into stationary phase, and increased sensitivity to exogenous cAMP.

Claim 4 (original): The method of claim 2, wherein said inhibiting expression of PDE2 gene comprises interfering with PDE2 gene transcription mediated by *cis* acting sequences.

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Claim 5 (original): The method of claim 4, wherein said *cis* acting sequences comprise *cis*-regulatory elements.

Claim 6 (original): The method of claim 5, wherein said *cis*-regulatory elements comprise UAS.

Claim 7 (original): The method of claim 5, wherein said *cis*-regulatory elements comprise URS.

Claim 8 (original): The method of claim 5, wherein said *cis*-regulatory elements comprise a cAMP response element (CRE).

Claim 9 (original): The method of claim 4, wherein said interfering with *PDE2* gene transcription comprises interfering with DNA binding proteins (BP) that bind to *PDE2* *cis*-regulatory elements.

Claim 10 (currently amended): The method of claim 9, wherein said DNA BP ~~comprise~~ comprises the CRE binding protein.

Claim 11 (original): The method of claim 1, wherein said altering expression of *PDE2* gene comprises the overexpression of said *PDE2* gene.

Claim 12 (original): The method of claim 11, wherein said *PDE2* gene overexpression results in one or more of the group consisting of defects in germ tube formation, inhibition of bud-hypha transitions, reduced filamentous growth, and a down-regulation of the cAMP-PKA signaling pathway.

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Claim 13 (original): The method of claim 1, wherein said virulence properties comprise adhesive properties.

Claim 14 (original): The method of claim 13, wherein said adhesive properties comprise ability of *C. albicans* to adhere to one or more human tissues.

Claim 15 (original): The method of claim 14, wherein said human tissues are one or more human tissues selected from the group consisting of vaginal, penile, oral, esophageal, gastrointestinal, and umbilical tissues.

Claim 16 (original): The method of claim 1, wherein said virulence properties comprise invasive properties.

Claim 17 (original): The method of claim 16, wherein said invasive properties comprise abilities of *C. albicans* to degrade extracellular matrix proteins.

Claim 18 (original): The method of claim 16, wherein said invasive properties comprise abilities of *C. albicans* to block neutrophil oxygen radical production and degranulation.

Claim 19 (original): The method of claim 1, wherein said virulence properties comprise proliferative properties.

Claim 20 (original): The method of claim 1, wherein said *C. albicans* has infected a patient.

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Claim 21 (original): The method of claim 20, wherein said patient suffers from a disease.

Claim 22 (original): The method of claim 21, wherein said disease is human immunodeficiency virus.

Claim 23 (original): The method of claim 21, wherein said disease comprises complications associated with acquired immune deficiency syndrome.

Claim 24 (original): The method of claim 21, wherein said disease comprises complications associated with an acquired immune deficiency syndrome related complex.

Claim 25 (original): The method of claim 21, wherein said disease comprises one or more diseases selected from the group consisting of HIV, mucosal candidiasis, oral candidiasis, esophageal candidiasis, thrush, hematogenously disseminated candidiasis, and candida vaginitis.

Claim 26 (original): The method of claim 20, wherein said patient is immunocompromised.

Claim 27 (original): The method of claim 20, wherein said patient is an organ transplant recipient.

Claim 28 (original): The method of claim 20, wherein said patient is undergoing a treatment regimen.

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Claim 29 (original): The method of claim 28, wherein said treatment regimen is chemotherapy.

Claim 30 (original): The method of claim 28, wherein said treatment regimen is a drug regimen.

Claim 31 (original): The method of claim 30, wherein said drug regimen suppresses the immune system.

Claim 32 (original): The method of claim 30, wherein said drug regimen incorporates the use of one or more drugs that are selected from the group consisting of azathioprine, steroids, cyclosporine, antilymphocyte globulins, monoclonal anti-T cell antibodies, prednisone, methylprednisone, and cyclophosphamide.

Claim 33-45 (canceled).